

elements inside the patients body to aid surgeons in, for example, pinhole surgery and minimally invasive operations. Images of various regions in the patient's body may be selected by moving the display to that region.

#### Example 4

##### Flexible Human Display

[0086] Alternatively, images of vital statistics, x-rays, ct-scans, MRIs, video images and the likes may be projected directly onto a patient to aid or otherwise guide surgery. Here, the human skin itself functions as a display through projection onto said skin, and through tracking the movement and shape of said skin by the apparatus of invention. Such images may contain user interface elements that can be interacted with by a user through techniques of this invention, and those known in the art. For example, tapping a body element may bring up a picture of the most recent x-ray of that element for display, or may be used as a form of input to a computer system.

#### Example 5

##### Origami Flexible Display

[0087] In this embodiment, several pieces of flexible display are affixed to one another through a cloth, polymer, metal, plastic or other form of flexible hinge such that the shape of the overall display can be folded in a variety of three dimensional shapes, such as those found in origami paper folding. Folding action may lead to changes on the display or trigger computer functionality. Geometric shapes of the overall display may trigger behaviors or computer functionality.

#### Example 6

##### Flexible Input Device

[0088] In this embodiment, the flexible surface with markers is used as input to a computer system that displays on a standard display that is not said flexible surface, allowing use of said flexible surface and the gestures in this invention as an input device to a computing system.

[0089] The contents of all cited patents, patent applications, and publications are incorporated herein by reference in their entirety. While the invention has been described with respect to illustrative embodiments thereof, it will be understood that various changes may be made in the embodiments without departing from the scope of the invention. Accordingly, the described embodiments are to be considered merely exemplary and the invention is not to be limited thereby.

#### References

[0090] 1. Balakrishnan, R., G. Fitzmaurice, G. Kurtenbach and Singh, K. Exploring Interactive Curve and Surface Manipulation Using a Bend and Twist Sensitive Input Strip. In *Proceedings of the 1999 Symposium on Interactive 3D graphics*, ACM Press, 1999, pp. 111-118.

[0091] 2. Fishkin, K., Gujar, A., Harrison, B., Moran, T. and Want, R. Embodied User Interfaces for Really Direct Manipulation. In *Communications of the ACM*, v.43 n.9, 2000, pp. 74-80.

[0092] 3. Guimbretiere, F. Paper Augmented Digital Documents. In *Proceedings of UIST 2003*. Vancouver: ACM Press, 2003, pp. 51-60.

[0093] 4. Holman, D., Vertegaal, R., Troje, N. PaperWindows: Interaction Techniques for Digital Paper. In *Proceedings of ACM CHI 2005 Conference on Human Factors in Computing Systems*. Portland, Oreg.: ACM Press, 2005.

[0094] 5. Ishii, H. and Ullmer, B. Tangible Bits: Towards Seamless Interfaces Between People, Bits and Atoms. In *Proceedings of CHI 1997*. Atlanta: ACM, 1997, pp. 234-241.

[0095] 6. Johnson, W., Jellinek, H., Klotz, L., Rao, R. and Card S. Bridging the Paper and Electronic Worlds: The Paper User Interface. In *Proceedings of the INTERCHI 1993*. Amsterdam: ACM Press, 1993, pp. 507-512.

[0096] 7. Ju, W. Bonanni, L., Fletcher, R., et al. Origami Desk: Integrating Technological Innovation and Human-centric Design. In *Proceedings of DIS 2002*. London: ACM Press, 2002, pp. 399-405.

[0097] 8. Klemmer, S., Newman, M., Farrell, R., Bilezikjian, M. and Landay, J. The Designers' Outpost: A Tangible Interface for Collaborative Web Site Design. In *Proc. of UIST 2001*. Orlando: ACM Press, 2001, pp. 1-10.

[0098] 9. Lange, B., Jones, M., and Meyers, J. Insight Lab: An Immersive Team Environment Linking Paper Displays and Data. In *Proceedings of CHI 1998*. Los Angeles: ACM Press, 1998, pp. 550-557.

[0099] 10. Levine, S. R. and S. F. Ehrlich. The Freestyle System: A Design Perspective. In *Human-Machine Interactive Systems*, A. Klinger, Editor, 1991, pp. 3-21.

[0100] 11. Mackay, W. E. & Fayard, A- L. Designing Interactive Paper: Lessons from Three Augmented Reality Projects. In *Proceedings of IWAR '98, International Workshop on Augmented Reality*. Natick, MA: A K Peters, Ltd., 1998.

[0101] 12. Moran, T., Saund, E., Van Melle, W., Gujar, A., Fishkin, K. and Harrison, B. Design and Technology for Collaboration: Collaborative Collages of Information on Physical Walls. In *Proceedings of UIST 1999*. Asheville, N.C.: ACM Press, 1999, pp. 197-206.

[0102] 13. O'Hara, K. and Sellen, A. A Comparison of Reading Paper and On-line Documents. In *Proceedings of CHI 1997*. Atlanta: ACM Press, 1997, pp. 335-342.

[0103] 14. Philips OLED Technology. <http://www.business-sites.philips.com/mds/section-1131/>

[0104] 15. Piper, B., Ratti, C. and H. Ishii. Illuminating Clay: A 3-D Tangible Interface for Landscape Analysis In *Proceedings of CHI 2002*. Minneapolis: ACM Press, 2002.

[0105] 16. Rekimoto, J. Pick-and-Drop: A Direct Manipulation Technique for Multiple Computer Environments. In *Proceedings of UIST 1997*. Banff: ACM Press, 1997, pp. 31-39.

[0106] 17. Rekimoto, J. Ullmer, B. and H. Oba, DataTiles: A Modular Platform for Mixed Physical and Graphical Interactions. In *Proceedings of CHI 2001*. Seattle: ACM Press, 2001.